



(72) ROSENSCHEIN, URI, IL

(72) ROZESZJAN, ARIE, IL

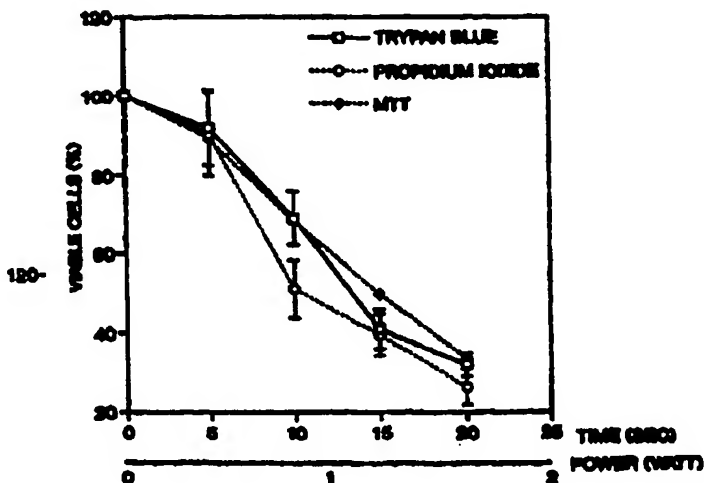
(71) ANGIOSONICS INC., US

(51) Int.Cl.<sup>6</sup> A61B 17/22

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(54) **APPAREIL ET PROCÉDE D'INHIBITION DE RESTENOSE PAR APPLICATION D'ENERGIE ULTRASONORE EN COMBINAISON AVEC DES MEDICAMENTS**

(54) **APPARATUS AND METHOD FOR INHIBITING RESTENOSIS BY APPLYING ULTRASOUND ENERGY TOGETHER WITH DRUGS**



(57) L'invention concerne un système et un procédé permettant d'inhiber une resténose en empêchant la migration, la viabilité et l'adhérence de cellules musculaires lisses (SMC) de mammaliens. Le système comprend une source d'énergie ultrasonore; un émetteur destiné à émettre l'énergie ultrasonore vers les SMC et un spectre d'administration de médicaments permettant d'introduire les médicaments dans les cellules musculaires lisses. Ces système et procédé sont notamment utiles pour la prévention d'une resténose dans le vaisseau sanguin d'un mammalien associée à la migration de SMC dans le vaisseau sanguin suite à une intervention vasculaire, telle qu'une angioplastie.

(57) A system and method for inhibiting restenosis by compromising the migration, viability and adhesion of mammalian smooth muscle cells (SMC). The system includes an ultrasonic energy source; a transmitter for transmitting the ultrasonic energy to the SMC and a drug delivery spectrum for delivering drugs to the smooth muscles cells. This system and method is especially useful in the prevention of restenosis in a blood vessel of a mammal associated with the migration of SMC in the blood vessel following vascular intervention, such as angioplasty.

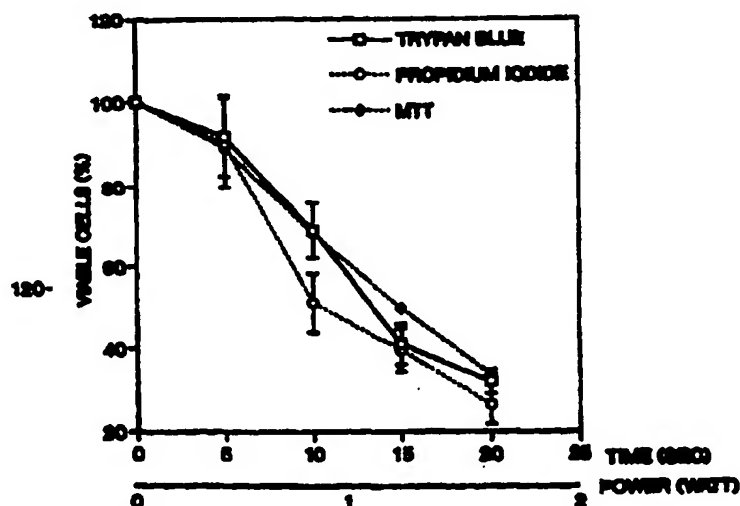


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(21) International Application Number: <b>PCT/US99/02332</b> (22) International Filing Date: <b>3 February 1999 (03.02.99)</b> (30) Priority Data: 09/021,162      10 February 1998 (10.02.98)      US (71) Applicant: <b>ANGIOSONICS, INC. [US/US]; Suite 207, 2200 Gateway Center Boulevard, Morrisville, NC 27560 (US).</b> (72) Inventors: <b>ROSENSCHEIN, Uri; 73125 Kefar Daniel (IL); ROZESZJAN, Aric; Hagefen Street 108, 47285 Ramat Hasharon (IL).</b> (74) Agents: <b>ROSENTHAL, Lawrence et al.; 180 Malden Lane, New York, NY 10038 (US).</b>			(81) Designated States: <b>AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GR, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</b>  Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: **APPARATUS AND METHOD FOR INHIBITING RESTENOSIS BY APPLYING ULTRASOUND ENERGY TOGETHER WITH DRUGS**

## (57) Abstract

A system and method for inhibiting restenosis by compromising the migration, viability and adhesion of mammalian smooth muscle cells (SMC). The system includes an ultrasonic energy source; a transmitter for transmitting the ultrasonic energy to the SMC and a drug delivery spectrum for delivering drugs to the smooth muscles cells. This system and method is especially useful in the prevention of restenosis in a blood vessel of a mammal associated with the migration of SMC in the blood vessel following vascular intervention, such as angioplasty.